MOTOROLA test equipment

power supply

MODEL T1012A

MP MASTER
MA31819

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68P868130-A

MOTOROLA

PORTABLE POWER SUPPLY

MODEL T1012A
12/24 VOLT

MC-5744

1. INTRODUCTION

The Motorola Model T1012A Portable Power Supply is used primarily for servicing 12 and 24 volt mobile radio equipment with power outputs up to 100 watts. It may also be used with 6 volt equipment having lower power outputs.

The Model T1012A may be used to simulate actual operating conditions by supplying slightly higher or lower than recommended operating voltages. This procedure may serve as an aid in locating intermittent faults.

2. DESCRIPTION

The Model T1012A is a continuously variable power supply that will supply operating power to equipment requiring a d-c input of 0 to 35 volts or an a-c input of 0 to 135 volts. The unit will handle currents of 30 amperes continuously and 40 amperes intermittently when used to power 6-12 v d-c equipment. At 24 v d-c or higher operation the current capacity is 20 amperes continuously or 30 amperes intermittently. The ripple content of the d-c output is low enough (less than 0.75%) to be used with most transistorized equipment.

The d-c output is brought out to receptacles on the front panel and is provided in two ranges (0 to 15 volts and 0 to 35 volts). The ranges are selected by a toggle switch mounted on the same panel. With the switch in the 15 v position, damage to 12 volt equipment by the accidental application of excessive voltage is prevented.

A conventional a-c outlet is mounted on the front panel for connection to the variable a-c source.

A d-c voltmeter and a d-c ammeter are mounted on the unit to meter the d-c voltages and currents with an accuracy of ±2% of full scale. An a-c calibration chart is included in this manual to convert the readings of the d-c voltmeter to approximate a-c voltages when the unit is used as an a-c source.

3. OPERATION

The Model T1012A may be placed in any convenient location that does not obstruct the air vents.

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Issue - A

a. DC Output

(1) Connect the power cord to a 110-120 volt a-c source.

CAUTION

Disconnect all equipment from the a-c outlet on the front panel when using the unit as a d-c supply.

(2) Connect the equipment to be powered to the d-c receptacles on the front panel with the two plug-in connectors supplied and heavy wire. Number 10 is the minimum recommended wire size for most applications.

NOTE:

Be sure of proper polarity when making connections to the equipment (RED-POSITIVE, BLACK-NEGATIVE).

(3) Turn the output control counterclockwise to the end of its range (minimum voltage).

(4) Place the 30 v-OFF-15 v switch in the 15 v position for 6-12 volt operation or in the 30 v position for 24 volt or higher operation.

(5) Advance the output control (clockwise rotation) until the desired voltage is indicated on the d-c voltmeter.

NOTE

The glow that can be seen through the air vents as the output control is advanced is a normal condition created by the internal load.

b. AC Output

(1) Connect the power cord to a 110-120 volt a-c source.

CAUTION

Disconnect all equipment from the d-c receptacles on the front panel when using the unit as an a-c supply.

(2) Turn the output control counterclockwise to the end of its range (minimum voltage).

(3) Place the 30 v-OFF-15 v switch in the 30 v position.

(4) An a-c operated device with a current consumption of 6 amperes or less may now be connected to the a-c outlet on the front panel.

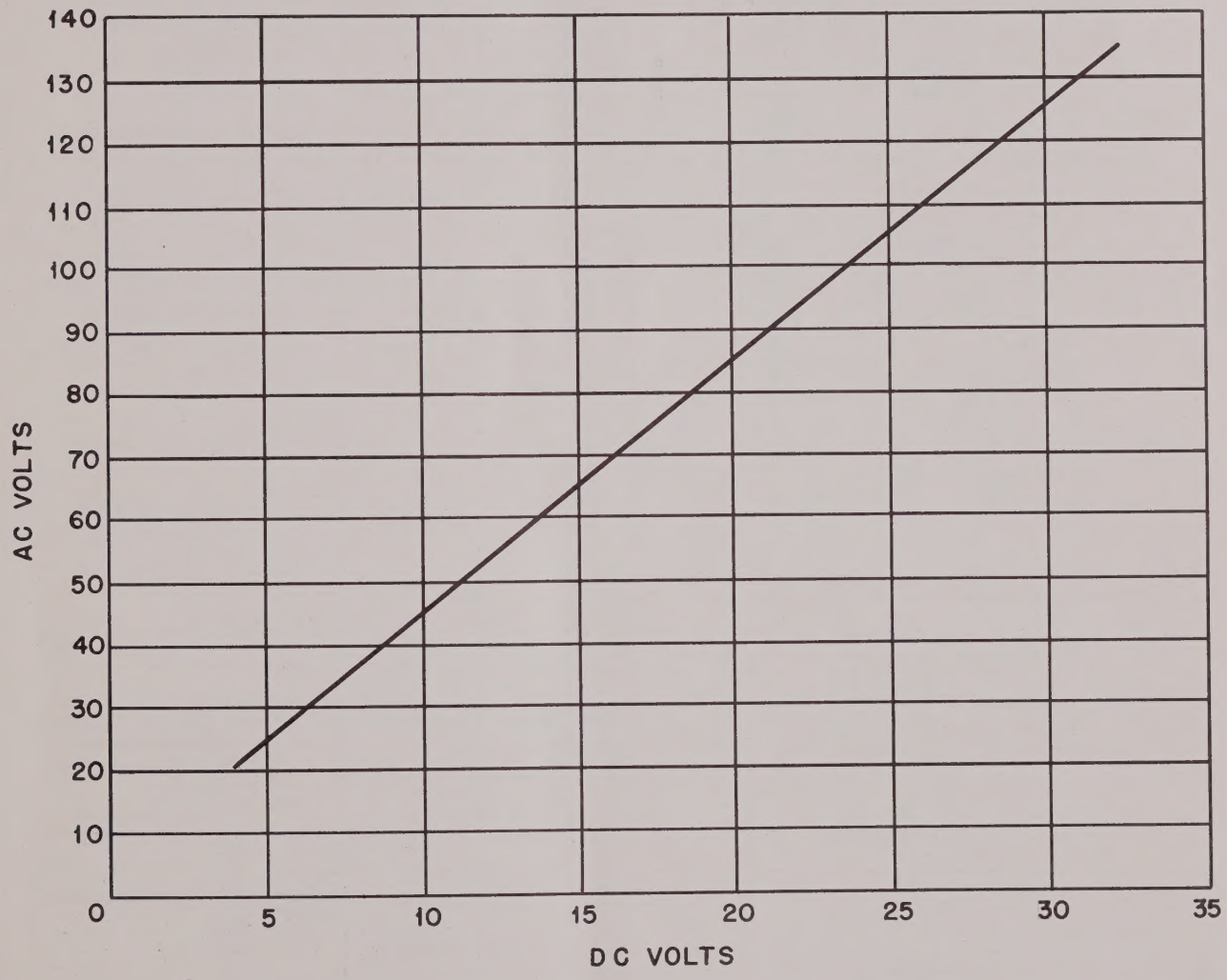
(5) Refer to the a-c calibration chart included in this manual for the reading to be obtained on the d-c voltmeter and advance the output control (clockwise rotation) until the meter indicates this reading.

GUARANTEED PERFORMANCE SPECIFICATIONS

MODEL	T1012A Portable Power Supply				
DC OUTPUT	0-15 and 0-35 v d-c				
AC OUTPUT	0-135 v a-c				
METERING ACCURACY	±2% full scale				
CURRENT CAPACITY	6-12 v d-c operation		24-35 v d-c operation		a-c
	continuous	intermittent	continuous	intermittent	
	30 amps	40 amps	20 amps	30 amps	6 amps
RIPPLE CONTENT	less than 0.75%				
INPUT VOLTAGE	110-120 volts 50-60 cycle a-c				
POWER CONSUMPTION	variable with load approximately 700 watts with 30 amp 12 v d-c load				
REGULATION	maximum 3 volt drop (receiver standby to full load 12 v d-c operation)				
OVERALL DIMENSIONS	13-1/2" high x 8" wide x 13" deep				
WEIGHT	approximately 56 lbs.				

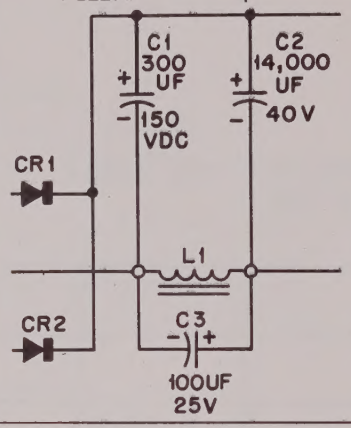
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

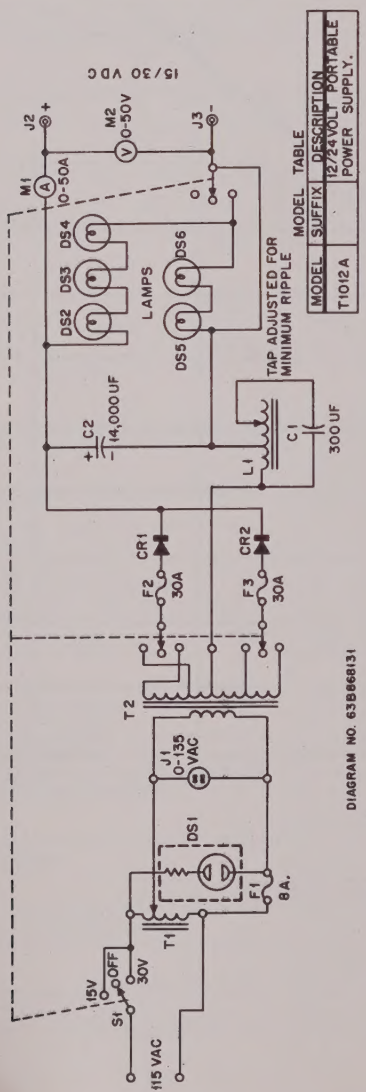
MODEL T1012A AC CALIBRATION CHART
115 VOLTS INPUT



REVISIONS

DIAG. ISSUE	CHASSIS AND SUFFIX NO.	REF. SYMBOL	CHANGE	LOCATION
A			FILTER CKT CHANGED. WAS AS SHOWN BELOW	





PARTS LIST For Schematic Diagram 63B868131-A

REFERENCE SYMBOL	MOTOROLA PART No.	DESCRIPTION
		CAPACITOR, fixed: electrolytic;
C1	23K868673	300 uf; 40 v
C2	23K868672	14,000 uf; 40 v
		CRYSTAL UNIT:
CR1	48K868674	rectifier
CR2		same as CR1
		LAMP:
DS1	60K868657	assembly; includes lamp and socket
DS2	60K868675	12-16 volt; 50 candle power; 2 contact; bayonet base
DS3		same as DS2
DS4		same as DS2
DS5		same as DS2
DS6		same as DS2
		FUSE, cartridge: slow blow type;
F1	65B846796	8 ampere; 250 v 1-1/4" x 1/4"
F2	65R20986	30 ampere; 32 v; 1-1/4" x 1/4"
F3		same as F2
		CONNECTOR, receptacle: female;
J1	9A893224	a-c; 2 contact; molded black bakelite body; chassis mounting
J2	9K868661	single contact; chassis mounting; coded RED
J3	9K868662	same as J2 except coded BLK
		REACTOR:
L1		choke; filter: part of T2 assy.
		METER:
M1	72K868677	d-c ammeter; 0-50 ampere
M2	72K868676	d-c voltmeter; 0-50 volt
		SWITCH:
S1	40K868678	4 pdt with "off" position
		TRANSFORMER:
T1	25K868650	variac; 0-135 volts; 7.5 ampere
T2	25K868670	power/choke assy.
		FUSEHOLDER:
XF1	9B865564	extractor post type; panel mounting; includes mounting hardware
XF2		same as XF1
XF3		same as XF1
	NON-REFERENCED ITEMS	
		CONNECTOR, plug: male; single contact;
	28K868659	coded RED
	28K868660	coded BLK
		CABLE, power:
	30K600980	a-c; 2 conductor; insulated; includes 2 contact male a-c plug

T1012A Portable Power Supply
Schematic Diagram
Motorola No. 63B868131-A
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